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ABSTRACT

The literature review of continuing education in pharmacy surveys 39 journal articles, books, conference reports and proceedings, and other publications published between 1960 and 1970. The review is divided into the following sections: prologue, which surveys the health professions, and new directions and limitations within them; the profession and continuing education, which examines pharmacist composition and distribution and concern for continuing education; participation in continuing education, which discusses characteristics of participants and their participants' reasons for attending or not; program organization and administration, which examines sponsors of programs, program administration, some sample programs, and recurring issues and trends; summary, which synthesizes the literature on pharmacists; and epilogue, which summarizes participation, programs, and research for the four health professions of nursing, medicine, pharmacy, and dentistry; and references. (JR)

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CONTINUING EDUCATION IN PHARMACY

A Review of North American Literature 1960-1970

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W.K. KELLOGG PROJECT REPORT #6

Vancouver
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1972

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W. K. KELLOGG FOUNDATION PROJECT REPORTS

No. 1 A Survey of the Need for Programs to Prepare Members of The Health Professions as Specialists in Continuing Education.

No. 2 Proceedings of a Conference on Inter Professional Continuing Education in the Health Sciences.

No. 3 Continuing Education in Medicine: A Review of North American Literature 1960 - 1970.

No. 4 Continuing Education in Nursing: A Review of North American Literature 1960 - 1970.

No. 5 Continuing Education in Dentistry: A Review of North American Literature 1960 - 1970.

No. 6 Continuing Education in Pharmacy: A Review of North American Literature 1960 - 1970.

INTRODUCTION

"As we examined the hundreds of briefs with their thousands of recommendations we were impressed with the fact that the field of health services illustrates, perhaps better than any other, the paradox of our age, which is, of course, the enormous gap between our scientific knowledge and skills on the one hand, and our organizational and financial arrangements to apply them to the needs of men, on the other.

"What the Commission recommends is that in Canada this gap be closed. That as a nation we now take the necessary legislative, organizational and financial decisions to make all the fruits of the health sciences available to all our residents without hindrance of any kind. All our recommendations are directed toward this objective.

"There can be no greater challenge to a free society of free men."

The foregoing quotation from the Report of the Royal Commission on Health Services in Canada (1964) presented a clear call to governments, teaching centres and health professionals themselves to insure that knowledge of health matters is made generally available as quickly as possible. Obviously such dissemination of knowledge must begin within the professions themselves. The review of Continuing Education in Pharmacy contained herein demonstrates the degree to which that profession has become involved in this task. That there is a lack of consistency between the professions in the degree of effort which has been put into Continuing Education is not surprising. Perhaps the production of this survey and its companion reviews will stimulate increased activity among the professional groups in which activity has been limited.

John F. McCreary, M.D.

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The authors are grateful to the many people who have assisted in the preparation of this review. Special thanks are due to Miss Jane Corcoran for preparing the manuscript for the press.

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Vancouver, B.C.
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CHAPTER 1

PROLOGUE

One of the most conspicuous and indeed alarming features of modern life is the rapid growth, proliferation, and diffusion of knowledge in every area of human endeavour. This is having an impact upon individuals and social institutions more profound than one can easily conceive or readily accept. It is producing changes that erode cherished myths about education which destroys personal and institutional security.

Individuals can no longer enjoy the security that is based on levels of educational attainment for new knowledge quickly makes past learning obsolete. The higher the original level of educational achievement, the more quickly obsolescence occurs; consequently, the several professions are more significantly threatened by change. At the same time, the accepted roles of social institutions are undermined. As new knowledge permeates all segments of society it alters the function and purpose of each institution in its relationship to others and to society in general. The firmly entrenched institutions are most threatened since their security is based on traditional responses to problems which new knowledge has made obsolete.

To survive in a changing world, both individuals and institutions must continue to learn. Such learning does occur but as DeCrow (6) has noted, much of it

> ...is happening unintentionally, largely unobserved, and without the slightest conscious direction. It is happening of necessity, almost as a reflex motion of a society grappling with social forces which are remoulding a nation to confront the challenges of a rapidly changing world.

But learning cannot be left to chance and without "... the slightest conscious direction." There is too much to be learned, too little time to learn it in, and too many distractions in the work-a-day world to ensure that the learning required will be achieved. In the past, such learning to keep abreast of new knowledge was thought to be an individual responsibility but few individuals accepted that responsibility so that the majority became obsolete and dysfunctional in a changing society. Consequently, it is becoming increasingly obvious that continuous learning is a responsibility that must be shared by both individuals and by society.

Some individuals and institutions have accepted this responsibility for continuing education more readily than have others and over a longer period of time. Adult Education has been an integral part of society for centuries but for the most part it has existed outside the institutional structure as an activity of individuals concerned about their own personal need for systematic learning opportunities or with a philanthropic concern for the needs of others. It is only within the past century that educational institutions have begun to accept a responsibility for continuing education but not yet to the extent that it helps shape the self-image of the institutional role and function in society. At the moment, adult education is still largely a marginal activity.

The several health professions are just now becoming aware of their role in and responsibility for the continuing education of their members. For the most part this has been forced on them and accepted with some reluctance through fear of losing control of their own destiny to other forces in society. In implementing this newer responsibility the health professions have not modified their traditional perceptions of learning

and education in light of new scientific knowledge about adult education so that their continuing education programs do not usually achieve the learning and changes in behavior necessary for improved patient care.

THE HEALTH PROFESSIONS

The scientific and socio-economic factors accentuating the need for continuing education in the health professions has been well documented in many health manpower reports (22, 21, 24, 19) and by numerous leaders in the health field (5, 15, 13, 3, 27). Research is producing new knowledge in the health field at an unrelenting pace. Science has made massive strides in the understanding, cure, and prevention of ill health so that life expectancy has been increased two-fold. At the same time, it has become increasingly apparent that new and better means must be found to hasten the application of new knowledge for the improvement of health care.

An increasingly informed public aware of new discoveries and demanding them has accentuated the need to hasten the spread and use of knowledge. Higher education and income levels, as well as expanded coverage by health insurance schemes is shifting the role of the consumer as 'patient' to that of 'buyer' thereby strengthening his position to demand more and better health services. A growing egalitarianism now views health care as a basic human right which should be readily available to all with equal quality.

In response to the changing nature of public expectations, universities and professional associations, joined by health service agencies and institutions, are attempting to prevent obsolescence by increasing their involvement in continuing education. Although some interest and activity in continuous learning has long been the concern of

some individual members of the health professions, it is only within the past decade that professional groups have concentrated their attention upon the provision of systematic educational opportunities for all in the professions.

In spite of this rapidly growing interest and concern it is everywhere apparent that continuing education is a responsibility not yet discharged satisfactorily or adequately at all levels (10, 12, 14, 19, 20). Moreover, as noted by Houle (11):

> ... even more disconcerting is the expression of a growing public hostility toward the several professions because of the alleged incompetence or self-satisfaction of their individual members, faults which better continuing professional education might have helped to prevent.

Although the case is not clear, the view is expressed widely that continuing education in the health sciences suffers from a lack of clear purpose, an absence of professional interest, and incompetence in the provision and conduct of educational activities. There is also widespread the impression that programs are ad hoc or piecemeal instead of continuing, and designed along the traditional lines of youth education rather than taking into account that the potential participants are adults.

Whatever the crux of the problem, the general consensus is that present programs have many shortcomings and that newer and more effective approaches must be found. Recent government reports recommending that "... professional associations explore the means whereby continuing education could be made a condition for practice ..." have added a new sense of urgency to the task (19, 21).

NEW DIRECTIONS

At present, programs for continuing education in the health professions are constructed largely on the model of academic pre-professional education which is controlled exclusively by subject matter and conducted primarily to disseminate information. This approach to learning stems from the prior educational experience of those planning the program as they generally lack sufficient knowledge about adult learning and instruction to do otherwise. Furthermore, as a result of their prior experience in pre-professional education, those for whom progams are planned resist educational activities that violate traditional conceptions regardless of their efficacy for learning. Since the traditional approach to education is not fulfilling the need, continuing education for health professionals must seek new directions.

In order to design new directions, it is necessary to examine existing activities in continuing education. This review, therefore, is a summary and analysis of the literature on continuing education in the health professions from 1960 to 1970 in order to provide a basis to seek new directions. By studying existing patterns of education for the professions it will be possible to avoid earlier mistakes and profit from prior experiences in designing functional educational programs.

CLARIFICATION OF TERMS

The term continuing education has been defined in various ways in the health sciences. Some definitions are broad and encompass all education following the completion of pre-professional programs in undergraduate study (1, 16). In other cases, the term is defined in a very restrictive sense to apply only to short refresher-type courses (9, 12).

Still others use the term as a synonym of adult education to include all learning activities which contribute to personal growth and development. In this sense, as noted by Cameron (2) "... the proportions of the task are formidable indeed".

As used in this review, continuing education includes any educational activity for health professionals "... through which opportunities for systematic learning are provided" (18). Thus, any planned learning experience is included in this term and these range from formal courses through conferences, conventions, institutes or workshops, to clinical traineeship so long as they are conducted for practising professionals and are systematic learning activities.

Instructional devices such as recordings, films, television, radio or programmed instruction are also included in this review where appropriate. For the most part such devices are used principally as information sources, to aid in self-instruction, or as ways of extending the range of an instructor to include widely dispersed participants.

The terms course and program are used interchangeably in this review and refer to those learning activities which are designed to achieve specific instructional objectives within a specified period of time. Thus, a program may consist of a single instructional event such as an evening meeting or a one day institute, or it may be a sequential series of events occurring regularly over a period of time (25).

The term method and technique are generally used interchangeably in the literature without specification. A method is a way of organizing the participants for the purpose of conducting a learning activity and may include correspondence study, classes, workshops, ward rounds, or clinical traineeships. A technique, on the other hand, identifies the

behaviours that occur in the instructional situation which are intended to help the participant learn and includes such things as the lecture, panel, symposium, discussion, demonstration and similar actions.

Learning is used here to identify the process through which an individual acquires a new capability that is a more or less permanent change in behaviour resulting from experience such as acquiring new information, a new skill, or an attitude.

The term instruction is used to identify the action of an agent who designs and manages a learning activity in order to achieve greater success in learning.

LIMITATIONS

This review is primarily concerned with basic program development for continuing education in the health professions. Most of the literature reviewed has been descriptive in nature covering a single program or a survey of program activities. There has been very little done in the way of substantive research and such as is available often fails to satisfy the rigorous canons of social science so that there is little validity or reliability in the data or conclusions presented. Perhaps if it accomplishes no other useful purpose, this review may spur the several professions to engage in research that is functional in answering the many problems identified in the literature.

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CHAPTER II

THE PROFESSION AND CONTINUING EDUCATION

With the transfer of drug production from the local pharmacy to a highly specialized pharmaceutical industry, the traditional combining and compounding skills of the pharmacist are fast becoming obsolete. At the same time, in the wake of the so-called "drug revolution," pharmacists have a major role to play in ensuring "adequate controls in the handling and dispensing of today's potent drugs" (30). Accordingly, the profession of pharmacy is presently seeking to define and interpret this mainstream professional function within the context of the changing health care system.

COMPOSITION AND DISTRIBUTION

Ross (33) surveyed the field of pharmacy in 1964 and found that the distribution of pharmacists in Canada followed a pattern somewhat similar to that reported for dentists and physicians. In short, British Columbia, Ontario, and Manitoba, reported the most optimum pharmacist/population ratios, while Newfoundland and the Yukon Territories reported the least favourable situation. In all regions the large urban centers were found to attract the greatest numbers and the younger pharmacists. A great majority of pharmacists in this country were engaged in retail pharmacy in 1962.

Although more recent figures were not available for Canada as a whole, pharmacist manpower statistics in the United States (11) and the 1968 Survey of Pharmacy in Ontario (22) suggest that the manufacturing and retail branches of pharmacy are still absorbing the greatest number of pharmacists. In the

TABLE I

PERCENTAGE DISTRIBUTION OF PHARMACISTS BY FIRST AND CURRENT EMPLOYMENT, 1962

Category of Employment	Percentage in First Employment	Percentage in Current Employment
Retail	90.64	79.60
Hospital	4.25	6.80
University	0.56	1.06
Government	0.07	0.44
Armed Forces	0.76	0.88
Manufacturing	2.89	7.17
Organizations	0.18	0.25
Retired		0.95
Outside Profession	0.65	1.81
Total:	100.00	100.00

SOURCE: Ross, T., Pharmacist Manpower in Canada; Royal Commission on Health Services; Ottawa, Queen's Printer, 1967, p.124.

meantime, there is evidence to suggest that hospital pharmacy is on the ascendancy and predictions are that as medical care becomes more hospital based it will become necessary to increase the number of hospital pharmacists and specialized training programs related to institutional pharmacy practice (10).

The proportion of women in pharmacy is reported to be increasing sharply (33). The Ontario study (30) revealed that in the 1967 graduating class of the Faculty of Pharmacy at the University of Toronto, 40.1 percent of graduates were women as compared to an average of 5.5 percent in the years 1926 to 1939. Hospital employment appears to attract a far greater number of female pharmacists that it does males (33). If these trends continue, they will have an important influence on the future nature of the profession. It can be expected that as the proportion of female graduates increases, a larger number of pharmacists will leave the profession at least temporarily after relatively few years of practice, and that an equally large number of pharmacists employed in hospital pharmacy will be part time workers. From the point of view of continuing education, this will mean that the profession will have to include in its long range plans an appreciable increase in the number of ongoing flexibly scheduled refresher courses.

As might be expected, faculties of pharmacy and research divisions in manufacturing establishments attract those few pharmacists with advanced degrees, while those with the minimum basic educational requirement are found primarily in hospitals and retail work (33). Brodie (10) notes, "that the future of pharmacy might well have been cast in a different mold had pharmacy chosen the model of medicine establishing the minimum educational requirement for practice as a professional doctor's degree." He believes that the

development of a sound professionally oriented program of pharmaceutical education at the time medicine established its basic educational program would have kept the practice of pharmacy free of the commercialism which is said to have clouded the profession.

The Changing Nature of Practice:

Whatever its past may have been, the practice of pharmacy is changing rapidly. The pharmacist is no longer simply a fabricator and dispenser of drugs. This traditional function has passed from the practitioner to the manufacturer and, more recently, pharmacy educators have been advocating a new role variously defined in the literature as "clinical pharmacist," "therapeutic adviser," or even "clinical pharmacologist" (16) (29) (2) (18). Whatever the name used, and in spite of the minor differences in the functions proposed, in all definitions it is emphasized that the pharmacist must be available to provide precise information on medications to enquiring health personnel and patients (30). In short, this new role would establish the pharmacist as a "drug information specialist." The implementation of this new role is a major concern of the profession for while some hospitals have successfully placed pharmacists on nursing units and on ward rounds with physicians (23), the process of change has been slow. Moreover, studies have shown that health professionals tend to seek drug information from sources other than pharmacists (30) (23).

A number of studies have revealed that pharmacists are able to provide the factual drug information, but lack consulting skills although several studies suggest that knowledge deficiencies may exist (23) (24). Since most of these studies are defective with respect to research procedures, no firm conclusions can be drawn. Most writers agree that an important vehicle for

helping pharmacists to assume this new role is continuing education.

NEED FOR CONTINUING EDUCATION

In pharmacy, continuing education refers to that phase of professional education which begins "after the practitioner has received his basic education, usually a Bachelor of Science or a Doctor Pharmacy degree, or after he has completed a program devoted to advancement in a particular area of his base education, usually a Master of Science or, more rarely, a Doctor of Philosophy degree and/or a hospital pharmacy residence." It's purpose, "is to provide a practitioner learner with knowledge, skills, attitudes, and insights, that will continue to increase his capacities and improve his professional confidence in rendering patient care" (12).

As in the other health professions, the development of continuing education is relatively recent in pharmacy. Blockstein (7) and others (14) (9), trace its beginnings to the Pharmaceutical Survey of 1948 (7) which brought the university pharmacy schools into the mainstream of continuing education activities. Its recommendations relative to institutions of higher learning were:

1. It is recommended that each of the accredited colleges and schools of pharmacy recognize and assume responsibility for providing organized programs of in-service professional instruction of the practising pharmacists within the area normally served by the institution, and to this end set up, under competent, professional direction, an operation unit to be known as the "division of pharmaceutical extension."
2. It is recommended that the duties of such divisions of pharmaceutical extension include the development of refresher courses conducted at the institutions, programs of reading correspondence study courses, and the systematic visitation and personal counselling of pharmacists.
3. It is recommended, in order to insure the maximum cooperative effort, that the state boards of pharmacy of each state take the initiative for the creation in the state of a Pharmaceutical Extension Council consisting of the dean of the college(s) or school(s) of pharmacy, the director(s) of the division(s) of pharmaceutical extension and representatives of the state pharmaceutical association and the state department of public instruction.

In response to these recommendations a number of pharmacy schools are reported to have established continuing education programs, and the concept of continuing education as a responsibility of the pharmacy schools gained in popularity, albeit slowly.

In 1955, the American Association of the Colleges of Pharmacy (hereinafter referred to as the AACP), established a Committee on Continuation Studies. Its purpose was to "study the problems of continuing education, make recommendations to the AACP, and to serve as a communication media among the member schools" (9). The annual reports issued between 1957 and 1967 have consisted largely of brief quantitative summaries of educational activities reported by member schools and comments with regards to reported problems. As early as 1957, the Committee recommended that a study be undertaken to determine the nature and scope of continuing education in pharmacy, yet it was not until 1967 that such a survey was actually undertaken (22).

The findings of this study reflect some progress where comparative data are available. Nevertheless, a more recent report by the Committee (37) concludes:

> It is difficult to find anyone who is satisfied with the present state of continuing education for pharmacists. Without impugning the fine efforts of some individuals, colleges, and associations, it is fair to state that more significant and successful continuing education programs are needed to help the practising pharmacists who are confronted by an ever increasing body of knowledge and by constantly changing conditions affecting their professional practice...it should be appreciated that the colleges must sponsor and direct the efforts needed to find solutions to the ever-present problems of continuing education, a low level of participation, inadequate or unsuitable programs, and insufficient financial support.

This review of the literature from 1960 to 1970 proved equally unrewarding. Only thirty three references were found which related to continuing education in pharmacy, and of these, only seven were of a research,

or more correctly, survey nature.

Of the reports located, probably the most useful source of information for those developing continuing education programs, are the proceedings of national conferences held by the Teachers' Section on Continuing Education of the AACP. These have been published in the American Journal of Pharmaceutical Education since 1964.

CHAPTER III

PARTICIPATION IN CONTINUING EDUCATION

Pharmacy has been the last of the major health professions to engage in the continuing education of its members. This involvement is of such recent origin that it is not generally recognized or accepted by either practising pharmacists or by universities. Consequently, there is a paucity of literature describing the extent of opportunities for continuing education or the acceptance of these opportunities by the profession.

Braucher (9) surveyed fifty-five colleges of pharmacy in the United States and gathered data about their programs in continuing education which gives some indication of participation by pharmacists. In presenting his data, Braucher indicates the number of pharmacists who were "promoted" or solicited to participate in courses and the number who actually attended. From these data he computes a participation index that is an interesting and curious statistic. In one respect this index is a measure of the percentage of the potential population that actually participated and, in another sense, it is an index of interest in continuing education and assessment of the effectiveness of the promotional activities of the sponsoring agencies (TableII).

Braucher's data covers two years and while there is generally an increase in 1968 over 1967, this is too short a period of time to indicate any trend toward increasing participation in continuing education by pharmacists. Between 1967 and 1968 there was an increase of 30.57 percent in the total number of participants in all courses reported. Furthermore, there was an increase from 5.64 percent to 7.31 percent in the percentage of the target

TABLE II

A COMPARISON OF PARTICIPANTS IN AND THE PROMOTION OF COURSES OFFERED BY PHARMACY SCHOOLS IN 1967 AND 1968 BY SPECIALTY OF THE PARTICIPANTS

Specialty of the Participants	Total			Courses Sponsored by Schools			Courses Co-sponsored		
	1967	1968	% Change	1967	1968	% Change	1967	1968	% Change
Community Pharmacy									
No. Participants	3,649	4,071	11.56	803	1,237	54.04	2,846	2,834	- 0.42
No. Promoted	50,436	58,429	15.84	27,077	36,800	35.90	23,359	21,629	- 0.74
Participation Index	7.23	6.96		2.97	3.36		12.18	13.10	
Hospital Pharmacy									
No. Participants	597	749	25.46	144	171	18.75	453	578	27.59
No. Promoted	18,610	20,350	9.34	16,560	16,650	0.54	2,050	3,700	80.48
Participation Index	3.20	3.68		0.87	1.03		22.10	15.62	
Industrial Pharmacy									
No. Participants	1,195	911	-23.76	708	730	3.10	487	181	-62.83
No. Promoted	27,044	12,069	-55.37	10,294	9,519	- 7.52	16,750	2,550	-84.77
Participation Index	4.41	7.54		7.67	6.88		2.91	7.10	
Mixed (Pharmacists and other Health Groups)									
No. Participants	9,710	14,052	44.71	5,991	6,403	6.87	3,719	7,649	105.67
No. Promoted	172,275	179,637	4.27	127,240	113,449	- 10.83	45,035	66.188	46.97
Participation Index	5,63	7.82		4.71	5.64		8.26	11.56	
Total									
No. Participants	15,151	19,783	30.57	7,646	8,541	11.70	7,505	11,242	49.79
No. Promoted	268,365	270,485	0.78	181,171	176,418	- 2.62	87,194	94,067	7.88
Participation Index	5.64	7. [illegible]		4.84	4.22		8.61	11.95	

SOURCE: Braucher, C., "A Comparative Analysis of Three Years of Continuing Education Activity"; American Journal of Pharmaceutical Education; 34:237 (May, 1970).

population that participated.

When employment is considered, community pharmacists showed an increase in participation of 11.56 percent, hospital pharmacists increased 25.46 percent, and those pharmacists classified as mixed increased participation by 44.71 percent. On the other hand, industrial pharmacists showed a decline of 23.76 percent.

In 1967, the courses sponsored by pharmacy schools alone attracted 1.87 percent more participants than courses co-sponsored with associations but in 1968 the co-sponsored courses exceeded the school courses by 31.6 percent. This suggests that the associations were a force in promoting courses. This is born out by the participation index computed by Braucher which shows 11.95 percent in 1968 compared with the schools index of 4.22 percent in the same year.

The participation index shows a decline in participation by community pharmacists but an increase in all other classes between 1967 and 1968. Industrial pharmacists had a greater increase in the participation index than did any other class.

When Braucher's data for 1967 is compared with that reported by Jobe (22) for 1966, there is a decrease of 7.8 percent but an increase of 20.38 percent in 1968. The concern is expressed by some in the profession that continuing education may be reaching the same group and that those most in need of continuing education may not be participating (8) (32).

REASONS FOR ATTENDING OR NOT

The three major obstacles to participation identified by respondents in the Purdue study (32) were: the difficulty of finding registered personnel to relieve the pharmacist during his absence; loss of income relative to time away from work; and geographical distance from the location of programs, in that

order. While distance was cited as an important obstacle by almost one quarter of the respondents, the school of pharmacy at Purdue conducts programs in local communities; furthermore, four of the eight respondents living in the vicinity of the campus admitted to not having attended a program on campus. This study also found that while 80 percent of the owners of pharmacies expressed a willingness to defray expenses for employees, only 5 percent of the employee respondents had had their expenses paid to attend. Deficiencies in the program were also rated as an important deterrent to attendance. The most frequently cited weakness of programs was their similarity.

Subject matter was the most important reason for attending while a well known speaker was rated second, and conference location third. The inclusion of social events in continuing education sessions was not found to be a major factor influencing the decision to attend.

Scheduling of Programs:

Polls indicate that pharmacists prefer one day sessions (19) (32), however, studies disclose that longer courses scheduled intermittently in the evenings are also favoured by a relatively large percentage of respondents (17) (19). In an earlier survey in the state of Mississippi, two to three day courses were rated highly, despite the obstacles to attendance (17).

Fees:

According to the respondents in the Purdue survey, a reasonable fee for a single session was considered to be between $5.00 and $14.00, but fees were not seen as a major deterrent to attendance.

Felt Learning Needs:

A number of surveys and reports suggest that despite a wide variety of topics requested, pharmacists tend to rate business management subjects

relatively high (13) (32) (19) (17). At least two surveys reveal that in the science area the greatest learning needs relate to pharmaceutical advances and pharmacology (19) (32). Bernardi (5) reports that in Connecticut pharmacists are increasingly requesting courses on physiology. Other topics which have been asked for frequently are interprofessional relationships and the effect of legislation on pharmacists (8) (19). When respondents were asked to offer further suggestions in the Purdue study, professional topics were requested far more often than business matters but with scientific subjects almost completely ignored.

Instructional Processes:

The Mississippi survey (17) found that 64 percent preferred the lecture technique. Less than 10 percent wanted participative laboratory courses, but 43.7 percent of the respondents did express an interest in demonstrations, which may indicate that pharmacists desire to learn and observe new techniques. In this study, 18.4 percent selected correspondence as the preferred means of keeping up to date. Other studies provide evidence that pharmacists would like opportunities to engage in independent study (13) (4). Tape recordings on pertinent topics have been cited as a method which would obviate the need to leave work in order to keep up to date. A recent evaluation of a correspondence course reported by Barnes (3) revealed that pharmacists rated correspondence study highly, with older pharmacists most responsive.

CHAPTER IV

PROGRAM ORGANIZATION AND ADMINISTRATION

A number of institutions and organizations are presently involved in the continuing education of pharmacists. These include: The American Society of Hospital Pharmacists, the Canadian and American Hospital Associations, university schools or colleges of pharmacy and medicine, and pharmaceutical associations at all levels--national, state or provincial, and local. However, the primary sponsors of formal programs are the university schools of pharmacy.

CURRENT COURSE OFFERINGS

There is very little descriptive data available about the extent of continuing education in pharmacy so that it is not possible to show changes over time with any validity. Braucher (9) has supplied virtually the only substantive data available and this covers the period of 1966 to 1968 so it is not sufficient to show positive trends. Courses conducted by Schools of Pharmacy during this three year period show a slight increase from 109 in 1966 to 145 in 1968. While most of these courses were offered on campus, the trend to more off campus courses is evident. In 1966, 68.80 percent of the courses offered were on campus but this declined to 46.89 percent in 1968. In 1967, the use of television was introduced with 13.04 percent of the courses in 1967 and 17.93 percent in 1968 offered through that media. As the number of courses increase the average length of the course declined from 9.51 contact hours in 1966 to 8.92 contact hours in 1968. (Table III)

TABLE III

COURSES SPONSORED BY SCHOOLS OF PHARMACY 1966-1968

CLASSIFIED BY LOCATION AND CONTACT HOURS

Course	Year					
	1966		1967		1968	
	Number	Percent	Number	Percent	Number	Percent
LOCATION						
On Campus	75	68.80	59	51.30	68	46.89
Off Campus	34	31.19	41	35.60	51	35.17
Other*			15	13.04	26	17.93
Total Courses:	109	100.00	115	100.00	145	100.00
CONTACT HOURS						
On Campus	-	-	619	58.45	822	63.52
Off Campus	-	-	404	38.14	389 1/2	30.06
Other*	-	-	36	3.39	83	6.41
Total Hours:	1,037		1,059	100.00	1,294 1/2	100.00
Average hours per course:	9.51		9.20		8.92	

* This includes television, telelecture, etc.

SOURCE: Braucher, C., "Three Year Analysis of Continuing Education." American Journal of Pharmaceutical Education 34:235 (May, 1970).

Braucher also reports the number of courses offered jointly by Schools of Pharmacy and Professional Associations for the same three year period. Joint sponsorship of this sort shows no consistency and no identifiable trends. In 1966 there were 145 jointly sponsored courses with 117 in 1967 and 138 in 1968. These data suggest a decline in joint sponsorship. The location of courses jointly sponsored is equally variable with 85.51 percent off campus in 1966 but 69.56 percent in 1968. The average number of hours per course tended to show an increase from 5.40 in 1966 to 6.90 in 1968 (Table IV).

In comparing jointly sponsored courses with those conducted solely by schools of pharmacy, several differences are noted. Courses conducted by schools are held on campus more frequently and tend to be longer than are those jointly sponsored. School courses on campus have increased in length between 1967 and 1968, while jointly sponsored courses on campus have declined in length over the same period. On the other hand, school sponsored off-campus courses were shorter in 1968 than in 1967, while jointly sponsored off-campus courses did not change in length. In both instances, off campus courses are shorter than those on campus. Although the schools of pharmacy have experimented more with television, jointly sponsored television courses have been longer.

The subject most often presented is pharmacology, with an increase of approximately 50 percent in the number of courses offered on this subject between 1967 and 1968. Subject matter dealing with community pharmacy showed a slight increase of some 16 percent. Although the number of courses on public health increased between 1967 and 1968, clearly course offerings on this very important subject are still small. It is also worth noting that no course was offered on dental health in 1968 and only one course offered in 1967 (Table V).

TABLE IV

COURSES SPONSORED JOINTLY BY SCHOOLS OF PHARMACY AND PROFESSIONAL ASSOCIATIONS 1966-1968 BY LOCATION AND CONTACT HOURS

Course	Year					
	1966		1967		1968	
	Number	Percent	Number	Percent	Number	Percent
LOCATION						
On Campus	22	15.17	42	35.89	40	28.98
Off Campus	124	85.51	73	62.39	96	69.56
Other	-	-	2	1.70	2	1.44
Total Courses:	145	100.00	117	100.00	138	100.00
CONTACT HOURS						
On Campus	-	-	455 1/2	51.76	351 1/2	36.86
Off Campus	-	-	393 1/2	44.70	542	56.93
Other	-	-	30 1/2	3.41	59	6.19
Total Hours:	784	-	879 1/2	100.00	952 1/2	100.00
Average hours per course:	5.40		7.51		6.90	

SOURCE: Braucher, C. "Three Year Analysis of Continuing Education." American Journal of Pharmaceutical Education, 34:235 (May, 1970).

TABLE V

NUMBER OF COURSES OFFERED BY SUBJECTS IN 1967 AND 1968

	1967	Percent	1968	Percent
Pharmacology	32	14.09	48	18.32
Community Pharmacy	31	13.65	36	13.74
Institutional Pharmacy	31	13.65	31	11.83
Management	34	14.97	34	12.97
Medicare	5	2.20	4	1.52
Pharmaceutics	26	11.45	26	9.92
Law and Ethics	13	5.72	14	5.34
Industrial Technology	14	6.16	15	5.72
Pharmaceutical Chemistry	3	1.32	16	6.10
Disaster Preparedness	-	-	-	-
Pharmacognosy	-	-	-	-
Medical Detailing	1	0.44	1	0.38
Communications and New Drugs	8	3.52	6	2.29
Radioisotopes	-	-	-	-
History	-	-	3	1.14
Career Orientation	-	-	4	1.52
Teaching	3	1.32	4	1.52
Science Librarianship	-	-	-	-
Cancer Control and Detection	1	0.44	3	1.14
Toxicology	3	1.32	3	1.14
Public Health	1	0.44	6	2.29
Dental Health	1	0.44	-	-
Miscellaneous	20	8.81	8	3.05
TOTAL:	227	100.00	262	100.00

SOURCE: Braucher, C., "Three Year Analysis of Continuing Education"; American Journal of Pharmaceutical Education; 34:236 (May, 1970).

ADMINISTRATION

The 1962-63 Report of the American College of Pharmaceutical Education disclosed that in 1962, thirteen colleges of pharmacy had Extension departments. Of this number, three reported a full time person in charge, while nine had a part time director, with two colleges reporting an additional part time person, and three reporting full time clerical staff (27).

A more recent report covering the academic year 1967-68 revealed little change, with only eight of the 74 colleges reporting a full time director in continuing education or extension and only nineteen a part time person. The majority of continuing education programs sponsored by the colleges are managed by faculty who have responsibilities elsewhere (1) which may account for the relatively few courses available.

Finances and Faculty:

As in the other health professions, funds are of prime concern in continuing pharmaceutical education. In 1966, registration fees made up about 45 percent of the total revenue, and in 1968, some 50 percent. The second major source of funds in 1968 was grant money used to subsidize courses (9). Although departments of continuing pharmaceutical education which are part of state universities are in a more stable position financially, generally speaking universities have not allocated much money to continuing education. Since regular faculty members who participate in continuing education programs are usually not paid, this limits the choice of instructors (34).

Although pharmaceutical firms have provided large sums for the development of experimental projects in continuing medical education, they have not been a significant source of funds for continuing pharmaceutical education.

Furthermore, government grants to support continuing education have been minimal. A number of writers express the view that pharmacy has lacked an organized approach in its efforts to obtain additional funding, and they recommend 1) establishment of central statewide continuing education offices to co-ordinate programs, pool resources, and to seek funds; 2) implementation of programs within the RMPS; and 3) inclusion of a research component in the program proposal, thereby ensuring potential sponsors some tangible results from the funds granted (21) (34).

Promotion and Publicity:

Promotion and publicity for continuing education in pharmacy have utilized the well established methods of direct mailing, professional association bulletins, calendars, newspapers, and professional journals (27). The University of Wisconsin department is one exception as it publishes a special periodical which includes, in addition to current course offerings, papers from university programs as well as articles and reports from journals which are not always available to practitioners (36).

An interesting technique that combines promotion with program planning is reported in use at the University of Colorado. White (38) noted:

1. A list of "proposed seminar topics" is sent to the students through their association. The participants indicate in which topics they are interested. They also indicate which night and what time schedule they prefer.
2. These are returned to the school of pharmacy, and a seminar schedule is made up.
3. Students are registered for the seminar by the Bureau, and fees are collected...The Bureau also makes expense payments to the school and to individuals.
4. Outlines for each session are prepared by the faculty member in charge of the evening class and these are made available to the students.
5. At the last session the students make an evaluation of the seminar, and attendance certificates are presented to the students (38).

SOME SAMPLE PROGRAMS

While continuing education in pharmacy is reported using a wide variety of methods and techniques, the typical program is said to be a conference, institute, or short course, all three of which consist of a series of lectures either on a wide variety of subjects or focussing on several aspects of a single theme (32) (14) (6). Of the few programs mentioned in the literature, the following examples illustrate the more innovative approaches currently in use in continuing pharmaceutical education.

Regional Programs:

The Kansas School of Pharmacy has been conducting statewide circuit type courses for many years. At present, four such programs are being offered in four places throughout the state, with the specific location varying for each circuit. In this way more rural pharmacists are able to participate in planned programs of continuing education (38).

For the past several years the American Society of Hospital Pharmacists (ASHP) has been sponsoring a centrally planned, regionally implemented eight to ten week preceptorship program, designed to orientate community pharmacists to institutional practice. Organized on an intermittent basis one half to one day weekly, this course combines classroom study with clinical practice. In 1969 McConnell (25) reported that more than 2,000 community pharmacists had participated in the program.

Mass Media:

As part of the university's extension service, the pharmacy program at the University of Wisconsin is using telelectures. The first series of such lectures was offered in March and April 1966, and attracted 180 viewers for

each program. An evaluation of this series revealed an overwhelmingly favourable response; consequently, in May 1966 a second series was offered on Institutional Pharmacy,utilizing a wide variety of speakers, including a nurse who discussed the nurse's role in the administration of medications. A questionnaire survey revealed that this program was regarded as excellent by the majority of respondents. Telelectures reach 47 locations throughout the State of Wisconsin and have attracted an enthusiastic response.

The college of pharmacy at the University of Minnesota has been using closed circuit television with direct feedback by telephone since 1967. The initial program, presented to three areas on three successive Monday evenings, attracted an interested audience so the project was extended. Subsequent programs have used pre-taped lectures but with the lecturer present in the studio for the question and answer period. In 1968, Hodapp (20) reported that the audience was made up of physicians, pharmacists, drug company representatives, and nurses. Comments from participants disclosed that the interdisciplinary mix was felt to be a valuable learning experience. One questionnaire evaluation revealed that while 52 percent of the pharmacist respondents thought the subject was covered in proper depth, 75 percent of the nurses felt it was covered in too much depth.

Other states reported using television include New York, North and South Dakota, Indiana, and Oklahoma (7).

Home Study:

The highly successful correspondence courses designed by Barnes at the St. Louis College of Pharmacy are said to have pioneered the use of correspondence as an instructional method in continuing pharmaceutical education (27). A number of colleges are reported offering correspondence courses (9), and

these appear to be widely used both by course sponsors as adjuncts to short courses and by practitioners as a method of independent study (4).

More recently, programmed instruction is making its way into pharmaceutical continuing education. North Eastern University in Boston, Massachusetts, is reported developing self-contained units and experimental courses (28).

ISSUES AND TRENDS

A recurring theme in the literature on continuing pharmaceutical education is the reported apathy or lack of motivation of practising pharmacists to continue their professional education. The question of how to reach the great number of practitioners who are presently not being reached has been widely discussed from many points of view.

A national survey conducted in 1965 of State pharmacy boards investigated their authority to make continuing education a condition for practice. Of the responding boards 36 felt that they were not so empowered, 9 felt they were, and 7 were uncertain (11). Since that study, at least two states have made participation in continuing education mandatory (8), and in 1968, the Committee on Continuation Studies recommended that a study be undertaken to determine the feasibility of making continuing education mandatory on a national basis (37). Because there are as many valid arguments for as against such a proposal, pharmacy remains divided on the issue (26). At the same time, paralleling the increased pressure from governments to make periodic re-licensure of health professionals compulsory, most of the pharmacy colleges and professional associations are presently re-assessing their continuing education role and activities in the field.

CHAPTER V

SUMMARY

The most significant development in the pharmacy profession in the past decade has been a change in the role of the pharmacist. With the transfer of drug production from the local pharmacy to an industrial establishment, the traditional role of the pharmacist as a compounder of drugs is rapidly disappearing. In its place is emerging a new role that places the pharmacist as the drug expert on the health care team. This emerging role is not completely recognized or accepted by the profession because it demands knowledge and skills of a different sort than that with which the pharmacist has been equipped in his pre-professional education. To assume a new role, then, pharmacists must acquire new and different knowledge through continuing education.

Neither individual pharmacists nor their institutions or associations have long considered continuing education to be a matter of importance. Consequently, there has been little done to provide programs for the further education of the profession. The lack of interest and concern in continuing education is amply illustrated by the paucity of literature on the subject as well as the almost total absence of any relevant research about continuing education in pharmacy. The scanty literature that has been produced is too nebulous and inconsistent to allow for any very reliable description of programs, administration, or participation in continuing education.

Only a very small percentage of the members of the profession participate regularly in planned programs of continuing education. This results

from both individual and professional factors. Individuals are deterred from participation by the loss in salary entailed as a result of being away from work and those who are entrepreneurs face the problem of securing a legally qualified person to substitute for them in their pharmacy.

The profession, through its associations and the schools of pharmacy, has failed to provide adequate opportunities for continuing education. This failure stems largely from a lack of interest in and concern for the continuing education of the profession. Add to these a lack of knowledge about how to provide educational opportunities and a lack of fundamental knowledge derived from research about the profession and its need for or acceptance of continuing education. As this review has shown, when the associations and the schools work together to provide educational opportunities, the response is enhanced so they need to become more deeply committed and involved.

The drug industry has provided support for research and experimentation in continuing education for other of the health professions but there is little evidence that it has done so for its own professional group. This may well be due to their not having been pressed to do so by the pharmacy profession.

University schools of pharmacy have the greatest stake in continuing education for the profession since education in pharmacy is their sole raison d'être. Although they have been involved to some extent in continuing education this appears to have occurred with some reluctance and certainly without creative leadership. The university schools of pharmacy have done virtually no research to provide a basis for programs and such that has been done suggests that continuing education has made but a minimal impact upon the practice of pharmacy because the knowledge essential to functional program planning has not been acquired through research. As the role of the

pharmacist changes, so must the form, content, and duration of education in pharmacy. In the literature reviewed there was no evidence to indicate an awareness of this in the schools.

Of the several health professions, pharmacy is the most backward with respect to continuing education. The profession must be aroused to the need for it to ensure the survival of pharmacy as a profession.

CHAPTER VI

EPILOGUE

Continuing education in the four major health professions has become a matter of growing concern that somewhat belatedly follows the need to keep abreast of expanding knowledge and the demand for better health care. Among these four professions studied, medicine is far in the lead with respect to the quantity of educational activities available to the members of that profession. It is followed in turn by nursing, dentistry, and pharmacy in that order. Each of these fields has approached continuing education differently with respect to the acceptance of the need for education, the resources committed to it, and the kinds of learning activities provided.

In none of the professions is there evidence of a real commitment to continuous learning by its members nor is there any substantial evidence of a real understanding of the educational process. The activities made available tend to be too few in number to meet the need, too poorly distributed to be generally available, and too poorly planned and conducted to insure that learning does in fact occur. Medicine has consistently committed proportionately more resources to continuing education than has the other health professions but nursing appears to be sensitive to the educational process as it applies to continuing education programs. Furthermore, there has been little research in any health profession to find the extent to which existing programs affect the practice of the members of the profession.

PARTICIPATION

Studies of participation in continuing education activities indicate that the members of the several professions are not deeply committed to learning to maintain their professional knowledge and skill. Participation rates vary among the four professions and within each. The variation within a profession appears to be related to the degree of specialization of the members. On the whole, the rate of participation falls short of that considered essential by the leadership of the professions.

Individual participation in continuing education is a matter of the attitude and motivation of the individual as well as the relevancy of the programs available.

Attitudes

The formal school experiences of adults develop attitudes about learning that tended to become a barrier to participation in continuing education. The normal pattern of schooling is designed to terminate at various points commensurate with an individual's life goals and vocational expectations. As a result, individuals do not recognize or accept the idea that education must continue throughout life in order to maintain some reasonable adjustment with a rapidly changing world.

The health professions reinforce and in fact, accentuate this terminal concept of education by the ways in which the professions are structured. Admission to the profession is the terminal point in education for many members although those with higher expectations may set new terminal points in certain specializations or for specific positions in the profession. Thus, the attitude that education is terminal

is reinforced to the point where it mitigates against participation in education continuously.

The prevelance of this concept of education has plagued adult education as Kidd notes:

> This terminal concept has long stood in opposition to the more creative idea that education is inherently an 'open-ended' process which can never be definitely complete as long as life lasts; and that wherever on the ladder one's schooling may have 'terminated', there still remains an as yet unused capacity for mental and spiritual growth. The need and the capacity for education not only continues throughout life but actually increases as the individual matures, provided that the capacity to learn is persistently exercised.

Prior school experiences have also tended to develop rigid and restrictive attitudes about the nature and form of education and learning. From elementary school through university, education has been structured in set patterns of courses, classes, and subjects in which the learner has been involved only passively with emphasis in the acquisition of information. Consequently, activities are rejected if they fall outside the range of traditional school experiences, because individuals have not learned how to learn. Both those who plan programs for continuing education as well as potential participants are inhibited by these restrictive concepts about education.

Motivation

The motivation to participate is frequently governed by the achievement goals of an individual. The structure of the professions tends to restrict or reduce the motivation to participate so that only those motivated by personal satisfaction are apt to participate in further education after they have reached their terminal educational objective.

The growing interest in limited licensure in the health

professions is thought to be an incentive for increased participation in continuing education. This does little more than set recurrent terminal points that will undoubtedly motivate individuals to participate in programs. Thus, while it may increase attendance, limited licensure cannot automatically produce the learning that will lead to improved practice.

An individual may be motivated to attend a continuing education program because of limited licensure, but the motivation to engage in learning will develop only if the individual feels the need to learn and experiences the satisfaction resulting from successful learning. Thus, the participation in education essential to improved practice will occur only through good learning experiences.

Relevancy

Participation is influenced by an individual's perception of his need for learning so that he will be more apt to attend those activities that appear to be related to his needs and interests. The achievement of relevancy is, therefore, crucial but it is inhibited by the fact that few individuals are capable of identifying their need for learning accurately in functional terms.

In order to insure relevancy it is necessary to develop procedures for assessing the need for learning. The health professions have not yet discovered satisfactory ways of determining needs. Attempts to do so through self-assessment inventories succeed in helping to identify information deficiencies but this is not necessarily the real learning needs. Such inventories operate on the assumption that knowing leads automatically to doing but this is the most persistent fallacy in education. Thus, the identification of information deficiencies does

not necessarily apply to the real learning needs related to practice.

The several health professions have achieved little with respect to understanding and solving the problem of participation as attendance at an educational activity without sufficient attention to engagement in learning. Motivation to attend may be engendered in many ways but the corollary motivation to engage in learning will be achieved only through an awareness of the need for learning and successful efforts to satisfy that need.

Since the problem of participation in continuing education is so strongly influenced by attitudes toward education, the basic solution to the problem will require a major change in pre-professional education programs and in the structure of the professions to establish the concept of continuity in learning as a substitute for the present notion that education is terminal.

PROGRAMS

The principal objective of continuing education in the health professions is the achievement of the learning needed to improve patient care. The literature reviewed here presents scant evidence that this objective is actually reached. It also suggests that certain misconceptions about education may be at the root of the trouble. These popular prevailing misconceptions include the following:

1. The objective of education is the acquisition of information.
2. Information automatically results in practice.
3. Instruction is the process of diffusing information.
4. Learning is the same regardless of the age of the learner.

5. Learning is the same regardless of the material to be learned.
6. The same instructional processes are appropriate for all learning tasks and all learners.
7. Learning does not involve the active participation of the learner.

These and other similar myths about learning have inhibited the effective development of continuing education. Their interference is most noticeable with respect to the planning of educational programs and the management of instruction.

Planning

The four major health professions discussed here have shown some creativity in developing educational activities suited to their particular populations but these have been more the exception than the norm. Most of the programs reported in the literature have adhered to the traditional patterns characteristic of schooling and the specific objectives are rarely identified. Whether stated specifically or not, the objectives have been almost exclusively related to the acquisition of information. It is apparent that there is little awareness of the importance of identifying objectives as the first step in program planning. Consequently, most of the programs reported attempted to cover too much material in the time available, were not directed toward a clearly identified end, and could not be evaluated meaningfully. Only by establishing precise and uncomplicated objectives is it possible to plan useful programs, select content, choose appropriate instructional techniques, and measure the achievement of learning.

Instruction

Nearly all of the programs discussed in the literature used instructional processes that are effective primarily for the diffusion of information with the lecture being the most frequently used technique. None of the reports indicated any awareness of the desirability of selecting instructional techniques to fit the program objectives and the material to be learned. Furthermore, there was no indication that program instructors did more than act as instruments for the diffusion of information.

To accomplish learning effectively and efficiently it is necessary to manage learning which consists of a sequence of events which the learner must be guided through and provided knowledge of the results of his efforts. This guidance of learning is the responsibility of the instructor who must have knowledge of the conditions affecting learning and the ability to plan the sequence of events through which learning occurs. This management function appears to be one of the weakest aspects of continuing education in the health professions.

RESEARCH

Most of the published material about continuing education in the health professions is exhortative. None of the professions have produced any substantial body of research useful in developing this aspect of the profession. Medicine has produced the largest volume of literature and pharmacy the least.

Although each profession has certain unique characteristics that make it necessary to conduct specific research, there is much that is common to all of the health professions and to all adult education.

Because of this, interprofessional research into continuing education would be more economical as well as beneficial to all of the professions. There is little evidence in the literature to indicate that the professions know or have used relevant research about adult learning and instruction that has been produced outside the profession. Greater use of such existing research would enable each profession to concentrate on its own unique questions.

Most of the research literature is descriptive in that it reports programs and procedures used in providing opportunities for continuing education for a particular population. This is most useful for the general spread of innovative program ideas but it contributes little to the advancement of knowledge. Such reports can be enhanced by more complete information about objectives, instruction, the characteristics of the population, and similar data to permit an analysis of the program and the results achieved.

The survey method has been predominant in the studies reviewed. In most cases, this has suffered from inadequate sampling procedures and controls along with incomplete data processing. As a result, the findings are not necessarily valid or reliable, consequently the basic data needed to plan and conduct continuing education activities for the several professions is not yet available.

Very little analytical research that tests relevant hypotheses or seeks to answer crucial questions has been done. As this kind of research increases it will accelerate the accumulation of substantive knowledge about continuing education in the several health professions.

CODA

Although this review of the literature indicates that there is little room for complacency about continuing education in the several health professions, it does show clearly a rapidly growing interest in and concern for the quality and extent of educational opportunities. The design and conduct of educational activities for adults is itself a specialized body of knowledge and skill comparable to that in any of the health professions discussed here. It is unusual indeed to find individuals equally equipped for a health profession and for adult education. That this must eventually come to pass is inevitable. Thus, the initiation of improvements in continuing education for the health professions must begin with the development of personnel within each profession for whom adult education is an area of specialization equal to those now generally recognized and accepted by the professions.

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